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The RS-1 about to moor at the Ford airship tower

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SPECIAL FEATURES

AN AIR TOUR OF THE NEAR EAST—LESTER D. GARDNER

THE MEYERS MIDGET

INVITING CAPITAL

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AVIATION

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On Making Records

AS IN the unfoldment of all other arts so in aviation, the development progresses through a series of phases which may at times prove delusive. A few years ago, American aviation was outstanding in the World development by the records which were continually being broken. American pilots, flying all-American airplanes were setting up World records as fast as they could. Speed records were broken in rapid succession, and so with altitude and load carrying, etc.

The situation, however, appears to have changed. Record making in aviation appears to have passed to France, where, during the past year, it has been carried out on what might be called a production basis. In spite of the sweeping economies which have been effected in French Government activities, breaking of World records is being encouraged to its utmost. Money grants are available to airplane and engine manufacturers whose products become record breakers. Service pilots are encouraged to engage in these contests. Nothing is said about proposed record breaking flights until they are accomplished, with the result that no adverse publicity is created in the event of failure.

As a result of this policy, the past few months in French aviation activities have been literally congested with record breaking flights. In August, 1926, Jean Marie Callizo left LeBourget airdrome and reached 12,442 meters (47,370 ft.), breaking his own World altitude record of October, 1924. Earlier, in June, 1926, the Arrachart brothers flew from LeBourget, Paris, to Basra, in Iraq, a distance of 2,435 miles, in 20 hr. and 30 min., while in the following months, Captain Girier and Lieutenant Dordilly, also of the French air service, beat this distance record and then set up a new record. They flew from Paris to Omsk, a distance of 2,934 miles, 200 miles further than the previous record without a stop. Their time was aproximately 29 hr. A number of other flights, perhaps not all World records, could be added to this list.

While all the flights are extremely commendable and demonstrate without doubt the endurance of the French pilot, it is necessary to view them from a broader standpoint. It cannot be said that all these achievements represent advances in aeronautical equipment. In the majority of cases, if not in every case, standard French service aircraft of not by any means the latest design were employed.

While record breaking is in general to be encouraged, airplane records which do not definitely involve advanced design or aim toward some particular development have only the one purpose, namely, that they increase international prestige among the more or less uninformed.

The United States, perhaps, has passed through the stage of expending large sums of money on pure record breaking and is getting down to constructive development along sheer business lines. This is a sign to be encouraged. For the time being at least, sufficient energy has been put into pure spectacular flying and the time to settle down to concentrated development of aircraft for useful purposes, whether military or commercial, has come. If this process is definitely adhered to and unfoldment is not permitted to become sluggish as a result of an absence of spectacular effort, record breaking can advisedly be left to others until such time as Americans can point with satisfaction and pride to the quantity and quality of service aircraft.

Cooperation in Air Navigation Aids

IN THE establishment of aids to air navigation, one of the most important problems which the Department of Commerce has to face is the proper and best utilization of the facilities which already exist. Not only is this of importance because of the possibilities of considerable savings in expenditures as a result of the adaptation of existing facilities but in some cases it can be shown that considerable complexity might exist if such coordinating methods were not adopted.

Take, for example, the question of the dissemination of weather information by radio and radio compass service, which facilities are of great importance to both sea and air navigation. Recently, the Navy's airship the Los Angeles has been carrying out a number of flights along the Atlantic coast, calibrating the Navy's radio compass stations for use inland. Until now, these stations, which extend all along the Atlantic coast, have been used only by surface craft. For this purpose, it has only been necessary for them to be calibrated "seaward". The extended activities in commercial air navigation now make it essential that some means be provided for supplying airplanes operating between the East coast states with radio bearings in case of poor visibility. The installation of a series of radio compass stations along the coast for the special use of airplanes would be unnecessarily expensive and would cause congestion. The cooperation of the Navy Department with the Department of Commerce in providing for these radio stations to be of service to air navigation is, therefore, highly commendable and should prove most satisfactory except in such cases where the pressure of both inland and "seaward" requirements becomes too great. It will then, of course, be necessary for the two Departments to operate their own stations or for more communal stations to be installed.

This is but one example of the conditions where cooperation in the new government air navigation activities will enable both economy and greater efficiency.

An Air Tour of the Near East

By LESTER D. GARDNER

(FOURTH PART)

THE ARABIAN Nights do not tell what eventually became of Aladdin's wonderful lamp that transported him and his beautiful Princess Bodroulboudour in his palace by air from Africa to its original location in Asia. It does relate, however, that the journey was made with only two slight shocks, one when it was taken up off the ground and the other when it landed. If Aladdin were alive today and wanted to take his beautiful bride on a ride that would be as wonderful as his first journey, he would probably rub his lamp and mutter to the genie, "Take us by air quickly from Cairo to Baghdad" and probably as speedily and comfortably as his first trip by air was made, these two early aerial travellers would be taken on another and more modern magic carpet with just the same absence from jolts as they experienced on their first trip.

Without the least doubt, the most fascinating and superlatively interesting air journey in the world is that from the borders of the Nile to the cities on the Tigris and the Euphrates rivers which is taken regularly by the Royal Air Force transport planes over the Arabian Desert route every two weeks. Early in 1927 this line will be taken over and operated by the Imperial Airways and made available to the public as a regular air transportation facility. It will also be extended across Persia to Karachi in India, providing a service which will be of the greatest value to the British Empire in connecting Egypt by a direct air transport line with the great Indian Empire.

Flying to the Birthplace of Mankind

To relate even the merest details of such a trip would require a volume rather than a few pages. Historical memories that come to the air voyager in a flight over Egypt, Palestine and the regions of Baghdad, Babylon and Nineveh, the birthplace of mankind, are so numerous that they will have to be treated in a most sketchy manner. The romantic side of the people that are met with and flown over comprises a literature of its own and takes the reader back over centuries of thrilling adventure and conquest. The story of the Royal Air Force controlling this vast territory by aircraft alone, will become an Epic of Aviation, when the true history of this newest of arms is written.

All of these phases will have to be recounted, at a proper time, by those who are able to assemble the facts and do justice to the unlimited possibilities of this air journey. Possibly, at a later time, it may be attempted in these columns, but for the present a very brief description of the route will have to suffice.

A Changed Map

Probably there is no part of the globe that is more strange to the modern traveller than the countries flown over in this desert trip. The mere mention of Iraq and Transjordania and Kurdistan bewilder those whose geography was learned before the maps prepared after the War were available. To make the route covered by the Cairo Baghdad air flight clearer, perhaps a few words about the territory will be helpful. To go back to the situation before the War, it will be easier to consider the three parts of the Near East separately. First, there is Egypt, occupying the north eastern corner of the African continent with a small strip beyond the Suez Canal in Southwestern Asia for protective purposes. Second, the territory of Turkey below what is generally called Asia Minor on that part of Turkey which is south of the Taurus Mountains. Here were the divisions of the Turkish Empire, then termed Palestine, Syria, Arabia, Mesopotamia and Kurdistan. These mean a very different area now to what they did before the War and it is because of this fact that so much confusion arises. The third division is that of Asiatic Turkey or Anatolia which forms the northern boundary of the territory that air travellers will be interested in.

The Vickers Vernon en route to Baghdad

While the War made no change in the boundaries of Egypt, the new borders of the second group of countries that were released from the rule of Turkey, make almost all maps of this part of the world obsolete and, even now, some of the boundaries are in dispute. For the purpose of this trip, the country north of Egypt bordering the Mediterranean may be divided into two parts, Palestine and Syria, the former under British control and the latter under a French mandate. East of the River Jordon and the Dead Sea, a new government has been set up and this is called Transjordania. It is mandated to Great Britain. To the south, there still remains the great desert and mountains of Arabia with very indefinite boundaries, and inhabited principally by Bedouins until the cities of Mecca and Medina are reached, where the new kingdom of Hedjaz has been created. Beyond the desert, the new state of Iraq has been formed. It extends from the Persian Gulf north westward for a thousand miles to the mountains of Kurdistan and can be said to comprise the fertile area of the valleys of the Tigris and the Euphrates rivers.

From Alexandria to Cairo

With this changed geographical condition in mind, a start may be made from Egypt for the air trip with perhaps a greater certainty that the air traveller may know something of where he is going. The Egyptian flying country is mainly along the Nile valley and it is here that the trip to India will start. While Cairo will probably be the terminus, Alexandria on the Mediterranean may eventually become the starting point if the traffic becomes heavy. To fly from Alexandria to Cairo is one of those experiences that recalls the often quoted exhortation of Napoleon to his troops when they were to fight in the shadows of the Pyramids, but to the fortunate one that is viewing this land of antiquities from the air the saying should be changed to—"You are looking down on forty centuries".

The airport of Alexandria is at Aboukir about ten miles to the East of the city. It is the site of the famous palace of Cleopatra where she received Mark Antony in such magnificent array. Here, too, is where Nelson defeated the navy of Napoleon and gave to Great Britain the control of the Mediterranean, a grip that she has never relaxed. Taking off for a sightseeing flight, the first impression of the country is one of exceedingly great beauty. The sea with a shoreline and islands that run jaggedly for miles, green cotton fields of the delta of the Nile, with the Father of Rivers spreading its many branches like, while to the west is the Libyan Desert. Where in all the world can such a combination of beauty, romance, history and variety be found? If the air traveller has had the experience of flying over a desert he may wish to take the route along the delta and see the great Barrage which is the dam that regulates the flow of the Nile so that this area may produce the most perfect cotton in the world. Or, he may wish to fly into the desert with its layer of sand dust several thousand feet thick, and try to locate landing spots among the ridges and undulating waste of the ever shifting sand.

Fifteen Pyramids from the Air

But no one who ever has the opportunity will miss coming out of the desert over the Pyramids. There is just one place in the world where this rare sight is possible and to those who have seen the old stone tombs from below, a new and enthralling experience awaits. To count from the air fifteen of these triangular masses of stone with a view of the Sphinx as an additional interesting side feature, brings into the sharpest contrast some of the oldest engineering triumphs with one of the latest—aircraft. Bordering the edge of the desert that parallels the Nile are scores of pyramids extending for miles but those of Gizeh are the largest and most interesting. Below, three thousand feet, it is not hard to imagine the hundred thousand workmen that toiled for twenty years to build these huge piles, trudging from the quarries near Cairo and the boats of the Nile, pulling and hauling the huge blocks of stone that they placed as high as five hundred feet over the base. How it was done is a mystery, even now, but to the airman who passes in a short half hour over these remains of bygone civilizations, the thought comes that these ancient mummies would be even more mystified if they could peer out of their crumbling resting places and see the new sky vehicle of the moderns.

A short detour brings the ruins of the Egyptian Memphis into view, as well as the slowly flowing Nile winding its way south into the heart of Africa, but as the start for Baghdad is soon to be made the plane is headed north and Cairo, with its hundreds of minarets, bazaars and modern buildings is flown over and the airdrome at Heliopolis on the outskirts of the capital is reached. This is not the place to describe this air station of the Royal Air Force, as a more complete description will be given in a future article. It is from here, next year, that thousands of passengers will embark on three-engined De Havilland planes for the unrivalled air trip of the Near East.

Mr. Gardner and three Bedouin friends at Ziza

The start of the Baghdad journey is now made early in the morning, the planes used being Vickers' Vimys and Vernons. Preferring an open cockpit, the Vimy was chosen and the front gunner's seat was soon occupied. Without any ceremony, the planes, for there were four in the convoy, took the air and headed northeast for the Suez Canal. The route is along the border of the fertile, irrigated delta but the flying is over sandy wastes for about fifty miles. Here, the strip of country that border a sweet water canal is reached and the course changed to due East. The air traveller is now seeing the Land of Goshen from the air. A landing is made at Abu Suwier, the training station for R.A.F. pilots with a natural landing field stretching miles in every direction. After a short wait, the planes take the air again and now commences the interesting flight over the Suez territory. The Cairo-Jerusalem railroad follows practically the same route and its pencil like mark on the desert can be followed for miles. To the east may be seen Ismailia with its high mooring tower that is to be used when the airship line between England and

India is started. The Suez Canal, a straight cut in the barren sands of a desert country can now be seen and gradually it comes nearer until, at Kantara, it is crossed. Here were the war base and shops of Gen. Allenby whose conquest of Palestine has brought such a revolutionary change in conditions in this part of the world. Port Said is too far to the north to be seen, but very shortly the Bay of Pelusium is reached and for an hour or two we are to fly along the shore of the Mediterranean. The trackless waste 7,000 feet below is but a long buff plain that extends inland as far as the eye can reach in the haze.

Over the Dead Sea

The historical background of this shoreline is too complex to be reviewed here but it should be noted that for the last two thousand years this has been the landing place for the succession of conquering Romans, Greeks and other races who visioned a conquest of the Assyrians, Persians, Babylonians and other ancient races. At Rafa, the coast is left behind and the frontier of Palestine is crossed. The course is now due east and is to cover some of the most interesting parts of the Biblical country. The first place that is sighted is Beersheba, which, of course, has always marked the limits of the Holy Land in the expression "From Dan to Beersheba." Oriental cities from several thousand feet are not of the greatest interest as they are built of material that looks like the land itself and the absence of striking large buildings, except mosques, gives little to distinguish them from one another. The mere fact of flying over such historical sites is sufficient.

But in a half hour, the whole country changes and the hilly shores of the Dead Sea are to be seen in the distance. The scene resembles the canyons of Colorado with ravines and precipices in all directions. There has been no landing place for a half hour and there is none in sight except the Dead Sea which is about five thousand feet below. Here, however, is a condition that is different from any that an airman gets in any other part of the world. The Dead Sea is about 1300 ft. below sea level so the reading of the altimeter while showing the altitude above the sea is very far off in indicating the true heighth above the water. The River Jordan which can be seen in the distance flows into the Dead Sea but it has no outlet, which causes it to remain brackish.

Here, again, the Biblical incidents come to mind. At the southern end of the sea is the site of the cities of Sodom and Gomorrah and farther still is the plain where Lot's wife was indiscreet and looked back and was turned into a pillar of salt. To the north, is the traditional site of the Palace of Herod where Salome danced and John was beheaded. With such memories crowding out the more pressing things of interest, the Vimy suddenly descends and the deserted city of Ziza is reached. We have now left Palestine and are flying over the new country of Transjordania. Below are thousands of camels, this being one of the chief grazing grounds for these "ships of the desert".

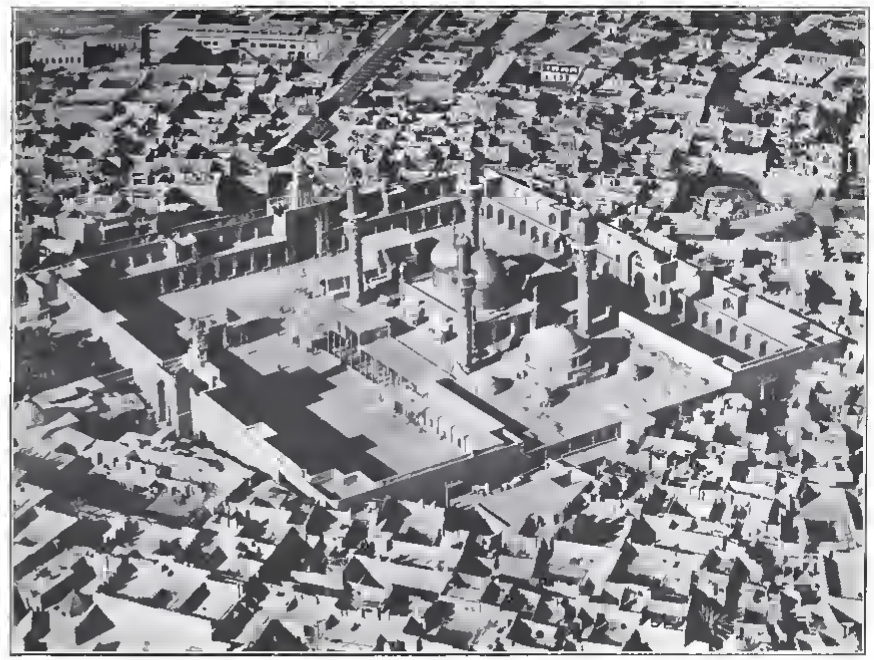
Ziza City

The town was a prosperous place until the inhabitants decided that there were too many marauding parties plying their trade in the neighborhood and left the buildings to their fate. Ziza is on the famous Hedjaz Railway that connects the cities of Turkey with Medina which is as near Mecca as it was possible to build it, for religious reasons. It runs its trains now, about once a week, or less frequently, and the trains always have troops to guard them. It was at Ziza that Ibn Saud the ruler of Hedjaz who had come north with eight thousand Wahabis, his tribesmen, was surprised by airplanes and tanks under the Royal Air Force and turned back with great losses.

As the distance across the desert was too great to be covered before nightfall, a stop was made at Ziza over night. Three hundred and twenty miles had been covered and the rest was a welcome one. The mess of the temporary R A F. camp was housed in the abandoned railway station but the ten officers that enjoyed the hospitality of the Squadron officers all praised the excellent fare prepared under the most primitive conditions.

At daybreak, the planes took off for the desert crossing. When the term desert is used, the impression may be gained that it is a sandy waste, but this is not the case. For a hundred miles after leaving Ziza the country is cut by many valleys of streams draining toward the Jordan and the Dead Sea. The ground rises to a height of 3,300 ft. above sea level,—shortly after leaving Ziza and almost all the way to Baghdad the flying is over a plateau consisting of rolling uplands and shallow depressions. Very little of the land is of true desert character, but should more properly be called a steppe, for there are good grazing grounds almost everywhere and the Bedouin Arabs may be seen with their black tents and flocks and herds at many places along the route. Basalt rock is the greatest obstacle that the airmen have to contend with in the event of forced landings. These small hills have eroded and large boulders are to be found covering large areas of ground. Mud flats, which in the rainy season are turned into very large lakes, are also peculiar to the desert.

Aerial View of the Cezeh Pyramids, Egypt



The Mosque of Kadhumain, near Baghdad showing a typical Arab city from the air

Following the Desert Track

A few miles out from Ziza the famous track is to be seen. This was made by heavy tractors and the markings may be seen clearly from several thousand feet. It is an excellent guide and serves to keep the route easy to follow and gives a direct road to the nearest R.A.F. station in case of landings.

At intervals of every twenty miles there have been established a series of emergency landing grounds with refueling tanks at certain of the fields. The flight across the desert takes about seven hours and is one of the most interesting journeys in the world because of the ever changing character of the ground and the numerous camps of Arabs to be seen along the way. At only one or two places are permanent buildings to be seen. At Rutbah Wells there is being erected, by the Imperial Airways, a hotel for air travellers and this desert inn will become one of the unique hostelries of the world next year.

Baghdad Reached

Without attempting at this time to give the details of the trip which has many interesting points for the air voyager, or to relate many personal incidents which are available for a more extended account, the arrival at Baghdad will be the next event that this record will describe. No one who has read of the adventures of Caliph Haroun Al Rashid and his story-telling bride Sheherazade could but be filled with eagerness when the city of the "thousand and one tales" comes into sight from the air. Before it is reached two other Iraq cities are passed over, one Ramadi, with its landing field where we will stop the night on the trip back, and Kadhimain with its gold domed mosque and sacred shrine. The Euphrates has been crossed and a very large lake seen before the Tigris comes into view. But soon the magic city of Baghdad sprawling on both sides of the river may be seen and while it does not have the appearance that was expected, its size and the location are most impressive. After a short flight over the city a landing is made at the Royal Air Force airdrome at Hinaidi about five miles from the center of the city. In the next article a description of the flights over Babylon and Nineveh will be given as well as the return flight over Jerusalem.

(To be continued)

Goodyear Keeps Pace With Air Development

In a highly interesting article, published by the Goodyear Tire & Rubber Co., in a special edition of *The Goodyear News*, the share of that company in the growth of aeronautics is given as one of the most romantic chapters in its experience. In 1911 the company coneeinded that aviation would be a factor in future problems of transportation and accordingly made plans for development of the industry along this line. The development of free balloons was the first work undertaken. R. P. Upson and R. A. D. Preston, the company's chief designers, in 1913 won the National Balloon Race, and flew from Paris across the English Channel, as American entries in the international event, winning the race and capturing the James Gordon Bennett Trophy cup.

A Navy spherical balloon manufactured by the Goodyear Company

Then came the World War. For the first time airplanes were used in warfare and the Goodyear Tire & Rubber Co. was able to place into immediate service a personnel trained in construction and operation, technical experts and plant machinery. It had its own hangar and flying field at Wingfoot Lake, Ohio, where 500 officers of the Army and Navy were trained for the Air Service and where hundreds of aircraft were completed, tested, and flown. Eight hundred observation planes were built and delivered during the war, 500 of these having been received in France in time to render valuable service in scouting and directing artillery fire.

Since 1919 Goodyear has had an entry in the national or international races every year. Gas cells for America's first rigid airship, the Shenandoah, were built in 1923 and shipped in 1925 to Belleville for assembly.

In 1923 the Goodyear Company, as is well known, acquired the Zeppelin rights, patents, processes, etc. for the American continent. Dr. Karl Arnstam, builder of the ZR-3, and Capt. E. A. Lehmann, chief pilot and officer of the Los Angelas on its flight across the ocean from Germany, are now associated with the Goodyear-Zeppelin Corporation, and it is planned to build a five or six million cubic foot ship, designed either for Governmental or commercial purposes.

Airfoil Data

A collection of data on airfoils has been made by the National Advisory Committee for Aeronautics, from the published reports of the leading aerodynamic laboratories of this country and Europe. This information, which is contained in a report entitled "Aerodynamic Characteristics of Airfoils", was originally expressed according to the different customs of the several laboratories, but is here presented in a uniform series of charts and tables suitable for the use of designing engineers and for purposes of general reference.

It is a well known fact that the results obtained in different laboratories, because of their individual methods of testing, are not strictly comparable even if proper scale corrections for size of model and speed of test are supplied. It is, therefore, unwise to compare too closely the coefficients of two wing sections tested in different laboratories. Tests of different wing sections from the same source, however, may be relied on to give true relative values.

The series of airfoils designated N.A.C.A. M1 to N.A.C.A. M27 were tested in the variable density wind tunnel of the National Advisory Committee for Aeronautics at a pressure of approximately 20 atmospheres.

The absolute system of coefficients has been used, since it is thought by the National Advisory Committee for Aeronautics that this system is the one most suited for international use and yet it is one from which a desired transformation can be easily made. For this purpose, a set of transformation constants is given.

Each airfoil section is given a reference number, and the test data are presented in the form of curves from which the coefficients can be read with sufficient accuracy for designing purposes. The dimensions of the profile of each section are given at various stations along the chord in per cent of the chord, the latter also serving as the datum line. The shape of the section is also shown with reasonable accuracy to enable one to more clearly visualize the section under consideration, together with its characteristics.

The authority for the results presented is given as the name of the laboratory at which the experiments were conducted, with the size of model, wind velocity, and year of test.

A copy of this report, No. 244, may be obtained upon request from the National Advisory Committee for Aeronautics, Washington, D. C.

Sherman M. Fairchild Visits Europe

The executive head of the Fairchild Aviation Corporation, Sherman M. Fairchild, is in Europe on a visit to various aircraft centers. Before sailing he announced the appointment of two new territorial representatives for the Fairchild Aerial Surveys, a subsidiary of the parent Corporation. They are, the Robertson Aircraft Corporation of St. Louis, and E. A. Johnson of Dayton, Ohio. In connection with the St. Louis appointment, Mr. Fairchild disclosed that his firm had been awarded a contract for an aerial survey of the Missouri River from St. Louis to Yankton, South Dakota,—a territory of approximately 900 miles. This is the largest contract of its kind to be awarded to a civilian concern in the Middle West. The work will be completed within 90 days of the signing of the contract. The Canadian Fairchild Company is using four planes, Mr. Fairchild said, a Huff-Daland, Vickers Vidette, Curtiss ME, and a Fairchild Aeromorne Metal Flying Boat, and he felt that an exceedingly busy year was ahead for the Fairchild organization.

Aircraft Exports

Statistics of domestic exports of aircraft and engines, from the United States, for the month of July, are given as follows by the Bureau of Foreign and Domestic Commerce, Department of Commerce, Washington:

Countries	Engines for aircraft Number	Engines for aircraft Dollars	Airplanes, seaplanes and other aircraft Number	Airplanes, seaplanes and other aircraft Dollars	Parts except tires Dollars
Italy					2,025
Tur. in Eur.					480
United King.	5	38,850	1	3,000	
Canada					223
Brazil					300
Colombia					621
Peru					500
Total	5	38,850	1	3,000	4,644

Inviting Capital

Safeguarding the Investor Against Needless Risk

By RAYMOND BALDWIN
Of the Boston Bar
(Former Commanding Officer 140th Aero Squadron)

ONE OF the greatest handicaps which commercial aviation has to overcome is the reluctance of the business man to invest his capital in an enterprise which he still regards as hazardous. To a large extent his reluctance is based upon the fear of accidents resulting in personal injury to passenger, public or pilot, and in litigation and liability likely to cast a heavy burden not only upon the earnings of the business, but upon its assets. The business man may have the greatest confidence in the management of the prospective company and in its choice of pilots. He may be impressed with the possibilities of large earnings. But he cannot rid himself of the impression that airplane accidents do occur, that a large percentage of such accidents are fatal, and that the legal liability of the company from a single accident may be so great as to wipe out a year's profits or even the entire investment. This fear cannot be successfully allayed by optimistic assurances that there will be no accidents. It can, however, be met to some extent by an analysis of the possible risks and provision for their elimination or reduction.

Legal Liability and the Investor

Fundamentally, the risk to the investor is the risk of accident, and every precaution and safeguard against accident benefits the investor, not only by increasing the confidence of the public in aerial transport and thus increasing the business, but also by enabling insurance companies to insure at low rates, and by reducing the likelihood of losses through liability on risks which are not yet insurable at a reasonable figure. But the investment is not carried in the cockpit, and the loss to the investor is not a direct and necessary consequence of each crash. It is an indirect loss imposed by way of legal liability in each case. Since aviation is a relatively new form of human activity most of its legal problems are as yet unsolved. How the courts will decide each case as it arises is still uncertain; and the courts of different states may decide similar cases on different principles, with opposite results. Certainty in the law can come only as each question is determined for each jurisdiction, either by the decisions of the courts or by statute. Insurance to offset each risk will be obtainable at reasonable rates only as the law becomes more certain and as the classification of experience enables the insurance companies to calculate the various risks with some certainty. Relative certainty as to risk to the investor, is, therefore, a matter for the future. But even now much may be done to protect the investment from unnecessary risk.

Possible Losses

To illustrate some of the possibilities, say that a commercial flying venture is started with several airplanes and a hangar. Suppose that one of the airplanes, containing pilot, passenger, and a shipment of express, has a forced landing and crashes into an automobile, damaging both the car and the plane and injuring the driver of the car, the pilot and the passenger of the airplane, and damaging the shipment of express. The operating company may find that its losses include not only (1) the damage to its airplanes, but also (2) liability to the driver of the automobile for personal injury, (3) liability to its owner for damage to the car, (4) liability for injury to the pilot, (5) liability to the shipper for damage to the express, and (6), last but most important, liability for the injury to the passenger. The assets of the company, including its hangar and airplanes, may be attached to pay for its liability; and if the company is not incorporated the investor may find himself personally liable, as well. The company can reduce its risk only by avoiding the accident, by reducing the likelihood of legal liability, or by insurance. The investor may further reduce his risk by placing only part of his investment in the company undertaking the risk. Let us consider first the risk to the company itself.

Where the Loss Falls

(1) The loss from damage to the airplane must be borne, in the first instance, by the business itself. Reimbursement, if any, must come either by recovery from the person at fault, or from insurance. Recovery from the pilot or other employee is unlikely unless he has means or has been bonded, and except in clear cases of wrong-doing a company will seldom find it advisable to hold its employees accountable. The loss can, however, be an greater than the value of the machine, and, if insurance cannot be obtained at a reasonable figure, the business man at least knows the maximum risk before he makes the investment.

(2) The injury to the driver of the car, however, may result in a liability impossible of calculation in advance but which might run into many thousands of dollars. Whether the company would be liable absolutely or liable only upon proof that its pilot was at fault, are questions which the law has not yet answered, except that under the Uniform State Law, in force in Delaware, Idaho, North Dakota, Utah and Vermont, the owner and lessee are made absolutely liable unless the person injured was contributorily negligent. But whatever views the courts and legislatures may take, the risks to a well run company, careful in its choice of equipment and personnel and in the operation of its airplanes, can be little greater than that run by a company operating automobiles, and the insurance rates will not be so high as to discourage investment.

(3) What has been said about injury to the driver of the car applies in large measure to the damage to the car itself. Here, too, the best safeguard is insurance.

Workman's Compensation

(4) If the pilot is an employee of the company and the company has not insured under the Workmen's Compensation Act, he may hold the company liable though he accepted the risk and though the crash was due to the negligence of a fellow employee (as, for example, a mechanic who failed to fill the gas tank). Where insurance cannot be obtained at a reasonable rate, some efforts should be made to enact legislation exempting airplane companies from the provisions of the Workmen's Compensation Acts. Until that is done, however, the only protection which the company can get, beyond the choice of capable pilots, is to forbid its pilots, by regulation or contract, to undertake any flight on behalf of the company until satisfied as experienced pilots that their own physical condition, the condition of the airplane, the state of the weather, and the course to be flown, are such as to make the flight reasonably safe, and to require them to fly carefully and in accordance with the regulations of the flying fields and the laws of the jurisdictions in which they are to fly. Where these conditions are imposed, although there appear to be no decisions as yet, it is to be hoped that they will be enforced by the courts, since it is upon the pilots alone that the company must depend and it would seem inequitable to permit him to recover for an injury which has been caused by his own breach of duty.

(5) As to the damage to the express carried by the airplane, little need be said. The damage can seldom exceed the value of the property destroyed. The liability can be avoided, however, by contract with the shipper, or by in-

surance, the cost of which can be added to the charge made for its transportation

(6) The greatest cause for anxiety will always be the fear of liability for injury to passengers No one who has the future of flying at heart, will deny that a passenger who has been induced to ride in an airplane, confident that every reasonable precaution will be taken to protect him from injury, and who has paid for the privilege, is entitled to full compensation for any injury which may occur without his fault, through the carelessness of the company or the pilot over whose acts the passenger has no control. Just as the fine tradition of the sea requires that in case of danger the captain of a ship and his crew shall give first thought to the safety of the passengers, so in the air the highest duty of every flying organization should be to safeguard those entrusted to its care This does not mean, however, that a company may subject the interests of its investors to needless risk. Experience has shown that not all claims for injury are based upon right, that not all cases are decided upon the facts, and that not all verdicts are true measures of the injuries sustained. A carefully managed company should have few cases in which it ought to be held liable If possible, this contingency should be covered by liability insurance. If not, the passenger should be sold insurance with his ticket, and the company relieved of liability by contract. The validity of contracts against liability to passengers has yet to be adjudicated in most jurisdictions If the passenger did not pay for his ticket the contract will generally be upheld. If he did pay, the answer will probably depend upon whether the company is a common carrier, that is, whether it holds itself out as ready to carry anyone who pays the price. There is no reason why a company may not limit itself to carrying as passengers only those persons who, because of their sporting instincts or business necessities, are willing to accept all the risks incident to flying Such contracts are used by the companies operating between London and Paris In any event the company will not be held for injuries to a passenger due to his own negligent conduct and breach of the reasonable regulations of the company, of which he has notice To this extent the company can protect itself by posting regulations requiring passengers to stay off the runways and away from planes on the ground and to abstain from acts likely to cause danger while in flight

The greatest protection to the investor is to be found in a well considered plan for the organization of the company Not only does incorporation protect the investor from personal liability, but the corporate structure itself may be adapted to the needs of the business, without subjecting the entire investment to the risks arising from accidents. Where, for instance, a proper development of the enterprise requires a large permanent investment for a hangar and other equipment not used directly in the transportation of passengers, there is no reason for this permanent investment to be subjected to the risks of the operating end of the business A separate corporation may be formed to own the property and to lease it to the operating company If this is done in good faith and by proper means, investment in a hangar should be an investment of the highest degree of security.

No general rules can be laid down for all cases Each enterprise has its own possibilities and problems But by careful analysis of the possibilities and problems in each case, much can be done to protect the corporation and the investor from unnecessary risks, with perfect legality, and with good faith to the public, whose confidence must be its greatest corporate asset.

The International Lightplane Competition at Orly, France

The international lightplane competition which was held under the auspices of the French Aerial Association from Aug 9 to 15 at Orly, near Paris, France was won by Dr. Zdenko Lhota on an Avia BH 10 two-seater monoplane fitted with a 60 hp Walter air-cooled engine Karel Fritsch, piloting a machine of the same type was second. Third and fourth places were secured by two Albert single-seater monoplanes fitted with 40 hp Salmson air-cooled engines, which were piloted by Charles Deseamps and Lieutenant Thoret, respectively.

The competition was open to single and two-seater sport planes. The elimination trials consisted in a speed and consumption trial over a 50 km circuit with climb to 1000 meters, take-off and landing trials for minimum distance, climb to 2000 meters altitude, starting the engine three times within fifteen minutes, one start being cold, and dissembly and assembly trials in which the machine with the wings taken down was pushed through a tunnel representing a small hangar, and then set up and taken off. The final test was a race from Orly to Orleans and back, a distance of 192 kilometers

Under the terms of the regulations, two-seat planes were distinctly favored for they were allowed in the 50 km consumption trial a fuel consumption of 14 kg as against 8 kg for single-seaters. This explains why the Avia monoplanes, which were slower and had a smaller climbing speed than the Albert monoplanes, beat the latter on points Dr Lhota's Avia made a high speed of 149.6 kilometers per hour, climbed to 2000 meters in 16 min 15 sec, landed in 120 meters, took off in 80 meters, made three engine starts in 3 min, 26 sec., was dissembled and assembled in 11 min., 34 sec and consumed 6.7 kg. of fuel over the 50 km. circuit

Descamp's Albert monoplane covered the Orly-Orleans-Orly circuit at an average speed of 164.4 km p.h, landed in 164 meters, took off in 91 meters, climbed to 2000 meters in 13 min., 30 sec, made three engine starts in 13 min, 26 sec., had its wings dissembled and assembled in 13 min, 9 sec., and consumed 3.8 kg over the 50 km. circuit Fritsch's Avia, which finished second, and Thoret's Albert which finished fourth, hardly differed in performance from the machines which finished first and third, respectively. It is, however, to be noted that the de Havilland Moth piloted by Mrs Elliott Lynn had the best landing run with 69 meters, the shortest engine starts with 3 min, 19 sec., and the shortest assembly and dissembly with 2 min, 43 sec.

The Belgian machines, a S A B C A biplane with a 60/70 hp. Anzani engine piloted by Van Opstal, finished fifth, and a S.A.B.C.A. cabin monoplane with a 45/50 hp. Anzani engine piloted by Wouters finished six. A Pander monoplane 25 hp Anzani engine piloted by Roupes and Lefebvre was eighth

One of the Avia BH II two-seater monoplanes (Walter 60 hp) The plane is Czechoslavakian.

Japanese to Aid Commercial Aviation

The Japanese Government has announced its desire, by the inclusion of items in the next year's budget, of spending approximately 22,000,000 Yen over a period of seven years in promoting commercial aviation

The plan calls for the formation of an air transportation company, capitalization of which is to be subscribed entirely by individuals This company must maintain a regular air service for mails between Tokyo and Osaka and between Osaka and Dairen The Government will build, at its own expense, the airdromes and other equipment necessary for observation and landing purposes The Japan Air Transportation Co, of Osaka will make trial flights to determine the feasibility of establishing a regular air mail route between Osaka, Saeul, and Dairen, and if it is decided that the plan is feasible, the Government will consider some method of financial assistance

This assistance may take the form of a subsidy (in the form of actual compensation to the air company, based on the number of miles flown), or it may be determined through the grant of a sum of money which will be equivalent to a certain percentage of the investment of the private company.

There will be no discrimination by the Government as to the kind of machines used, and it is entirely probable that some foreign-made machines will be tried. The first planes to be used, however, according to the announcement of the Japan Air-Transportation Co., are products of the Kawanishi Co., and said to be equipped with engines of 460 hp

Trachte Steel Hangars

Pioneers in the construction of steel products for over a quarter of a century, Trachte Brothers Company, Inc., of Madison, Wisconsin, is rapidly taking its place among the most popular manufacturers of portable steel airplane hangars in the central West This company controls many of the basic patents used by manufacturing concerns the country over in the construction of portable steel buildings

"Built of galvanized, copper-bearing steel of patented construction, the Trachte Aeroplane Hangar is warmer in Winter and cooler in Summer," reads a statement by Trachte Brothers Company Thus it thoroughly protects all parts of housed planes"

"Being portable," the statement continues, "the Trachte Hangar may be transported or moved about many times and all parts will fit perfectly It is easy to erect Perfect drainage is afforded and plenty of light. The folding entrance doors occupying the entire width of one end slide easily into place While constructed in standard sizes, Trachte Hangers are built to accommodate any number of planes"

To their hundreds of patrons over the country the name "Trachte" on any portable steel building has come to mean reliability down through the concern's quarter century of service in this field In addition to portable steel airplane hangars, Trachte Brothers manufacture and distribute portable steel garages, warehouses, stores, cottages, machine sheds, filling stations and steel boats.

Reed Propellers on Winning Planes

In two out of three series of the German seaplane competition, held at Warnemunde July 12, the winning planes were equipped with Aeron-Reed propellers A Junkers plane, with Junkers engine L-5, 230 hp., and a Heinkel plane, H.E-5, with Jupiter engine, 420 hp., won the contests, being equipped with Reed propellers made by the Mattullbank, of Frankfurt, Germany, from alloy of duralumin

The Reed propeller, it will be recalled is also made under license in Great Britain by the Fairey Aviation Co which is achieving similar success with these excellent propellers.

The Albert TE-1 single seater (Salmson 40 hp) which put up fastest speed (102.5 m.p.h.), fastest climb and most economical running The pilot was M. Descamps The Albert is of French manufacture

RS-1 Moors at Ford Tower

The first mooring of an airship at a privately owned airship tower and, in fact, the first mooring of this particular ship at any tower, occured on Sept 18, when the Army semi-rigid airship RS-1, under the command of Col John Paegelow of Scott Field, was hauled down in a perfect landing to the new Ford airship tower at Ford airport, Dearborn, Mich

The big semi-rigid airship built by the Goodyear Tire and Rubber Co, flew an uneventful night trip of 450 miles from Scott Field, St Louis, arriving at Detroit several hours ahead of time Constant radio communication was established from the Ford station to the ship and all details of the landing were worked out before the ship arrived In the absence of an Army representative who unfortunately had a forced landing enroute to the airport, Capt Herbert V. Thaden, Air Corps Reserve and chief designer of the Aircraft Development Corp took charge of the mooring operation Assisting him was Fred Lampky, formerly of the Lakehurst

The RS-1 pulling up to the Ford airship mooring tower at Detroit

Naval Air Station Only about fifteen other men were actively required in the docking manoeuver instead of the 150 and more men required for the usual ground landing.

The field and surrounding country side were completely covered in a blanket of fog which somewhat hindered progress but, nevertheless, at 7 05 a m Colonel Paegelow, after circling the field three times, nosed down, dropped his main mooring cable to the coupling party and the powerful automatic winch in the tower started pulling the ship down As the ship neared the tower head its engines were run astern and the small ground party steadied the ship's yaw lines Water and gasoline lines were immediately coupled into the ship's tanks and the mooring cables taken back into the hull

Henry Ford, who witnessed the entire landing from a vantage point atop of the tower was the first to greet Col Paegelow as he climbed out of the forward hatch This first landing of a ship to his own tower was a proud moment for Ford as evidenced by his smiles and remarks

Others to greet the ship were W B Mayo, Ford's chief engineer, Carl B Fritsche, general manager of the Aircraft Development Corporation, Ralph H. Upson, chief engineer of the same company, and builder of the Ford tower, and W B Stout.

The ship rode at the tower all the morning, half of the crew remaining aboard and the other half stretching their legs below while a constant stream of visitors climbed in and out of the ship, inspecting its interior and commodious cabins Shortly after noon, the airship made a preliminary weigh-off and at 12 15 p m finally left in perfect trim The ship was to have returned again to the mast for a day's lay-over after a short trip to Selfridge Field, but severe storm warnings from Scott Field necessitated a change in program and the RS-1 returned to its base

Colonel Paegelow and his officers aboard were much impressed with the haul down device, a feature of the tower which enables an airship to be brought down to and rested on the ground while still secured to the tower This enables the crew to have ready access from the ground directly and greatly facilitates servicing and loading an airship

Radio Compass Stations for Air Use

Radio compass stations, whose activities have been heretofore directed to informing ships at sea of their bearings, are to be expanded to undertake a similar service to aviation. This has been announced by the Bureau of Aeronautics, Department of the Navy

The advantage to aviation, both commercial and military, of standardization of these radio compass stations, is of the greatest importance With commercial aviation rapidly progressing and the consequent greater utilization, the time is not distant when accurately calibrated compass stations will be in almost constant service.

These compass stations, located all along the Atlantic coast have been calibrated only seaward This limits their capacity to the work of giving bearings only of ships

In line with this plan the airship Los Angeles has been designated to engage in the work of calibrating the radio compass stations along the Atlantic coast so that they may be competent to give bearings to aircraft. Already the Los Angeles has calibrated the eight compass stations along the New England portion of the coast The airship now is engaged in calibrating stations along the Atlantic coast in the vicinity of Poyner's Hill, N. C., Virginia Beach, Va., and Hog Island, N J Recently, it completed the calibration of stations along the shores of Long Island, Narragansett Bay and Cape Cod

Calibration consists of checking the direction from which the radio signal comes against an actual visual bearing of the compass station taken at the same instant. A series of these radio and visual bearings are plotted, and from this data the error of the compass on every degree around the circle is computed This error remains constant so that tables prepared from the calibrating work of the Los Angeles will, in the future, give the correct bearings which the compass stations can send to either ships or aircraft which ask for them

The reason for the use of an airship in preference to airplanes for the calibrating work is, of course, due to the fact that the airship is steadier in the air and can maintain flight for longer time and at slower speed, all making for accuracy in calibrations. In addition, the trailing antenna of an airplane gives a false position as the radio compass computes the position at a straight line to the ground for the antenna. In the case of an airship, however, the position is given as directly under the nose of the ship

It takes from three to five hours to calibrate a compass station for aircraft use, but the giving out of a bearing to a pilot with the necessary checking occupies only about one minute

The value of this calibration work should become of immediate importance to Colonial Air Transport, Inc., which operates the New York Boston air mail service, especially as the winter months come and flying conditions along the Atlantic coast are bad.

The Meyers Midget

A New 30 Horsepower Lightplane.

ONE OF the new lightplanes developed during the past year and which made its first appearance at Philadelphia during the National Air Races was the Meyers Midget, a very small single-seater biplane with a Bristol Cherub III engine of 30 hp. The plane was, in fact, finished only just in time for the races and actually performed its first flight at Philadelphia at Model Farms Field on Monday evening (Sept 6) after the last scheduled events of the races that day had been concluded. The Midget was designed by Charles W. Meyers, and constructed in the shops of the Kreider-Reisner Aircraft Co., Inc., of Hagerstown, Md.

Very unfortunately, at the Air Races, Mr. Meyers had very bad luck and was forced down on the seventh lap of the fist lightplane race due to dirt collecting the jets of the carburetor of the engine. Owing to the extremely bad weather which had prevailed in Philadelphia, the forced landing was made in absolutely impossible ground with the result that, while the plane did not sustain anything like the damage it might have met, both the upper wing tips were smashed and it was, therefore, impossible for Mr. Meyers, who was piloting the plane, to take part in any other race. This was extremely unfortunate since in the first flight of the little plane on Monday evening, the machine demonstrated that it had a very good climb and speed and appeared to be very controllable and comfortable to fly.

Meyers Wing Section

The construction of the Meyers Midget is a striking example of excellence both in detail and in finish. The wings, upper and lower, are tapered in both plan form and in thickness, the section being a development of Mr. Meyers, designated M-6. The interplane bay is single, formed of a Vee formation of struts, one pair on each side of the fuselage. There is no interplane wire bracing, two outward sloping struts extending, one pair on each side, from the bottom longeron to the upper wing spars at the points of connection of the interplane Vee struts. There is a four foot difference in the spans of the upper and lower wings and the chords of the two wings are accordingly proportionate. The wing spars are of channeled spruce, with spruce ribs. Warren trusses and birch gussets provide for rigidity in the structure.

Novel Fuselage Construction

The fuselage is formed of birch veneer bulkheads with a narrow veneer side, forming a girder from front to rear about one third the actual depth of the fuselage. Spruce longerons of L section are arranged on each side of this plywood girder and these form the main structural members of the fuselage. Spruce fairing strips are arranged on both the upper and lower sides of the fuselage, thus providing fairing above and below the fuselage proper, giving an oval section. These fairing strips are so placed as to take part of the vertical stresses. A double plywood and veneer girder runs from under the seat, through the bottom and center of the fuselage, to the rear of the bulkhead back of the engine. This carries the pilot's seat and the controls and also provides a mounting for the lower wing and two cross-bracing members of the undercarriage structure, in addition to a foundation for certain cross bracing members of the engine mount at the front end.

The engine mounting is of welded steel tubing as are all wing struts and landing gear struts. All struts are faired with balsa wood. The covering of the fuselage and wings is doped fabric with the exception of that part of the fuselage at the pilot's cockpit which is covered with veneer. The tail unit consists of a vertical fin built into the fuselage, with the normal type of unbalanced rudder with non-rigid trailing edge. These details apply also to the horizontal stabilizer and elevators. The entire unit is constructed of spruce, the fixed stabilizer being constructed in two sections. The tail

The Meyers Midget (Bristol Cherub, 30 hp.)

skid is of steel tube mounted on a tiny fin below the fuselage and sprung with rubber.

The undercarriage, as already mentioned, of steel tube faired with balsa wood, is of conventional design, the two Vee formations of struts terminating at the lower fuselage longeron at the points of termination of the interplane bracing struts. In addition, for rigidity and undoubtedly providing ample strength to the undercarriage, there are the two bracing struts which come to a common point of termination under the forward bulkhead at the secondary girder already referred to. The undercarriage axle is sprung with rubber bands in the conventional manner.

Fuselage Wing Support Structure

The support for the center section of the upper wing over the fuselage is completely faired into the top of the fuselage. This practice is also followed in the case of the lower wing which is actually located a little distance below the fairing of the under side of the fuselage, the mounting being completely faired. This arrangement gives a very nice appearance to the machine and also enables perfect continuity of the main spars in both upper and lower wings. The entire finish of the machine is in Valspar.

As already stated, the power plant is a Bristol Cherub twin cylinder horizontally opposed engine which is faired under a very well designed cowling. The propeller is a 4 ft 6 in. dia. 3 ft 1 in. pitch metal Curtiss-Reed.

Specifications

The general specifications and details of the Meyers Midget are as follows:

Span upper wing	18 ft.
Span lower wing	13 ft.
Length overall	13 ft. 2 in.
Wing area total including ailerons	70 sq. ft.
Wing area upper wing	45½ sq. ft
Wing area lower wing	24½ sq. ft
Angle of incidence both wings	3 deg
Gasoline capacity	2½ gal
Oil capacity	3 qts.
Weight empty	504 lb.
Weight loaded (150 lb. pilot)	483 lb
Weight of fuselage landing gear, propeller, engine tanks cowling stabilizer elevators rudder	324 lb.
Weight upper wing ailerons and control cables	87 lb
Weight lower wing	12 lb.
Weight interplane struts and truss bracing struts	12 lb

Unfortunately, owing to the air races and the subsequent mishap, it has not yet been possible to carry out any tests upon the plane to determine figures of performance. It is known that the plane handles very well and that it has a good performance but no actual figures are available. On one flight at Model Farms, however, Mr. Meyers flew side by side with a special streamlined Waco plane and found that the Midget was considerably faster, the Waco pilot afterwards saying that his engine was fully open at the time of the comparison. Mr. Meyers is of the opinion that the Midget has a speed of about 100 m.p.h. New wings are being constructed and the plane should be in the air again in the near future, when careful test flights will be made.

A Corrected Air Race Results Table

On page 503 of AVIATION, Sept. 20, in the article on the National Air Races, there appeared a table of results of Event No. 14, the race for the Liberty Engine Builders' Trophy. In this table, due to an error in copying the official score card, all the Curtiss O-1's and the Douglas O-2's were called Vought planes and said to be equipped with the Wright J-4 engine, which, of course, is the engine fitted in the Vought UO-1. The true facts are that, with the exception of the Special DH plane (Packard 1A-1500) and the Vought UO-1 (Wright J-4) of the Navy, all the entrants in this race were either Curtiss O-1 Falcon observation planes with Curtiss D-12 engines or Douglas O-2 observation machines with Liberty engines. The winning plane, flown by Capt. Ira Baker, was a Curtiss O-1 with D-12 engine as was also the machine taking second place. Third place went to the Special DH while the only other Curtiss planes in the race took fourth and fifth places. Thus, with the exception of the high powered DH plane, Curtiss Falcons with Curtiss D-12 engines took the leading places in the race, a very creditable performance for the Falcon machine, which, incidentally, is the most favored observation plane in the Air Corps.

The complete results of Event No. 14 were as follows:

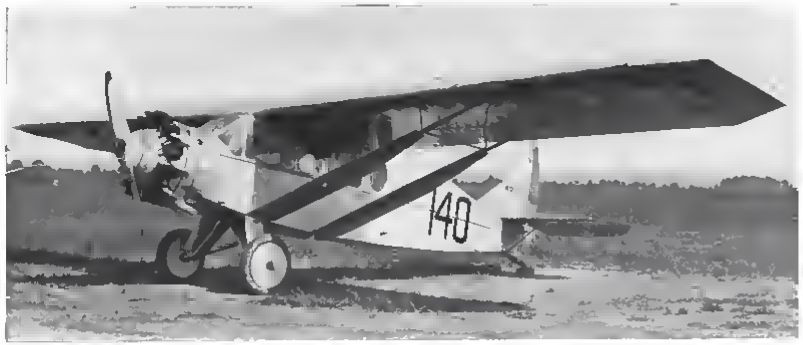
Pilot	*Plane*	*Engine*	*Speed (m.p.h.)*
Capt. Ira Baker	Curtiss O-1	Curtiss D-12	142.285
Capt. Aubrey Hornsby	Curtiss O-1	Curtiss D-12	141.830
Lt. G. T. Owens, U.S.N.	D.H. Special	Packard 1A-1500	140.828
Maj. T. H. Pirie	Curtiss O-1	Curtiss D-12	138.961
Capt. J. J. Colgan	Curtiss O-1	Curtiss D-12	132.773
1Lt. G. A. McGinley	Douglas O-2	Liberty	128.218
Lt. L. S. Webster	Douglas O-2	Liberty	125.967
Lt. P. E. Skanse	Douglas O-2	Liberty	124.838
Lt. H. G. Peterson	Douglas O-2	Liberty	122.083
Lt. R. L. Fisher	Douglas O-2	Liberty	120.541
Maj. J. M. Reynolds	Douglas O-2	Liberty	119.360

A Tension Meter for Airplane Wing Fabrics

The Bureau of Standards of the Department of Commerce has just perfected an instrument with which to measure the tension of the fabric covering of airplanes and airships. The instrument was devised for the Bureau of Aeronautics of the Navy Department.

The new instrument is simple and convenient to operate. It is so constructed that a portion of the fabric is isolated and its tension measured without in any way disturbing the covering.

Another view of the Meyers Midget (Bristol Cherub 30 hp.)



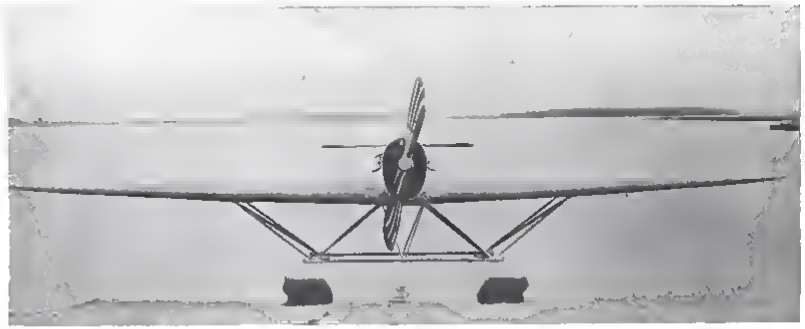
SPEED AND EFFICIENCY. The Wright-Bellanca with the new Wright Whirlwind J-5 engine (200 hp.) which did so well in speed and efficiency in the Air Races.

THE AIRPORT AND Love Field, Dallas, Tex., one of the most perfectly equipped commercial airports in the country. This airport forms the southern terminus of the air mail route from Chicago operated by National Air Transport, Inc.

(c) Fairchild Aerial Surveys

—THE CITY IT SERVES. An excellent view of the city of Dallas, Tex., which gives a very fine idea of the value of air photography in city planning.

(c) Fairchild Aerial Surveys



A PRIZE WINNER. The Heinkel seaplane (Napier Lion 450 hh.) which won the recent German commercial seaplane competition. There were seventeen planes entered, only three completed the strenuous trials.

POWERLESS FLIGHT. Gliding over the Wasserkuppe, Germany, in the 1926 Rhon gliding meeting held during July and August.

THREE JOBS IN ONE. A Navy Curtiss three-purpose plane practicing torpedo dropping at sea.

Gen. O'Ryan heads Colonial Air Transport

Governor John H. Trumbull of Connecticut, Chairman of the Board of Colonial Air Transport, Inc., has announced the election as president of the Company of Major Gen. John F.

Major Gen. John F. O'Ryan

O'Ryan of New York to succeed W. Irving Bullard, who has resigned to become chairman of the Executive Committee. With the advent of General O'Ryan, the financial structure of the Company will be materially expanded by the participation of New York banking and industrial interests. The Colonial Air Transport, Inc. at present holds the contract for the transportation of mail between New York, Hartford and Boston, and its planes are flying daily between the three cities.

General O'Ryan who commanded the 27th Division during the World War, is a practicing lawyer with offices at 270 Madison Avenue. He has been, for the past five years, a member of the New York State Commission and his experience in this connection will undoubtedly prove of the greatest value in his entering the air transportation field. The announcement has been received with the greatest of satisfaction.

Governor Trumbull has also announced that J. T. Trippe, former managing director, who was instrumental in organizing and developing the company to its present state of efficiency, will become vice-president.

The Colonial Air Transport, Inc., has operated its air mail contract since July 1 over what is one of the most difficult airways in the United States, without an equipment failure. This airway will be one of the first to be lighted by the Department of Commerce under the recent Air Commerce Act.

Airway Lighting Surveys to be Made

Two recently appointed airway superintendents, John Bonforte and Alvin Smith, are about to conduct lighting and other surveys on the established Pasco-Elko and the Los Angeles-Salt Lake City airways. Bonforte will cover the first named route and Smith the latter.

It is expected that the work will require about a month's time during which the men will spend many hours flying over the airways. They will recommend where the big revolving beacons shall be placed, where the emergency landing fields shall be located and look into other problems connected with the installation of proper navigational facilities to develop commercial air traffic with safety and profit.

Side Slips

By ROBERT A. OSBORN

Another indication that aviation is shortly to come into its own, is that at least one manufacturer has begun to design his product specifically for the use of aviators. The manufacturer we have reference to is in the fountain pen business, and is spending a great deal of money advertising that his pen can be dropped three thousand feet without breaking. It certainly must be a great relief to the owners of such pens to know if they ever drop them over the side of an airplane, that whoever finds them will be able to use them.

• • •

We suggest that the manufacturer of this pen, if he wishes to make one that will really be popular in the industry design it so that it will not only not break, but bounce back into the hands of the poor pilot who dropped it. The chances will be great that this was the very pen with which he signed the mortgage on the old homestead, in order to buy one of the cheaper commercial planes, and he wouldn't want to lose the souvenir.

• • •

This recalls what we think to be the best of the many comments which were written about Mr. Ford's new lightplane. It appeared in Punch (London) and we herewith pass it along for those who didn't see it in that magazine—"Mr. Ford has invented a new and cheap monoplane. All bolts and nuts are said to be fitted with miniature parachutes to insure a safe landing for them."

• • •

There seems to be quite a future to this business of testing things by throwing them out of an airplane, and it might pay some young fellows to establish a reputation as first class airplane pitchers. We saw a series of tests recently, at a flying field, in which a couple of crates of eggs were thrown out of plane about ten feet off the ground and later dropped from another plane in a parachute. We couldn't quite make out whether the inventor of the crate thought he had a wholesale egg scrambler or some sort of an egg-nogg mixer, but we can testify that the eggs were cracked about as well as any we have ever seen. The pilot apparently had a few grudges to settle on that field, as he was all for trying out some eggs, without the crate, from about a thousand feet. This last test would have been the most interesting of all, but, unfortunately, could not be tried out, as the inventor had foolishly put all of his eggs in one basket.

If any young chap cares to enter this airplane throwing business seriously, we could put him in line for some good business right away. There are at least three families we know, having outlandish vases and lamps for wedding presents that they might like tested in that manner.

• • •

You can believe it or not, but the other day we saw the Chief Engineer, Vice-President, General Manager, Treasurer and Factory Superintendent of a newly incorporated airplane company, all flying in one small airplane. He was soloing a "Jenny".

You may remember that a few weeks ago we prophesied that some interesting legal cases might come out of the distribution of handbills and insecticides from airplanes. The police of Interlaken, N. J., are hunting for the chap who circularized that town from the air—intending to make him pick up all of the circulars he dropped. Apparently the real reason for the fire of the Interlaken police officials is that the handbills were intended for Asbury Park, but landed in the other town because of a high wind. It is interesting to speculate on what might have happened to this flier if he had dropped some Los Angeles advertisements in San Francisco.

AIRPORTS AND AIRWAYS

Seattle-Los Angeles Mail Route Opened

On Sept 15 the Post Office Department inaugurated the air mail route between Seattle and Los Angeles, which is the first of the contract air mail routes to be operated at night and the first to have a lighted airway Beacons, similar to those in use in the government-operated transcontinental route, have been installed between Seattle and Portland and San Francisco and Los Angeles The remainder of the route will be flown in daylight

The Pacific Air Transport Company, the contractor, uses eight planes and, under the schedule, planes, southbound, will leave Seattle daily, except Monday, at 3 45 a m , Portland, 5 45 a m , Medford, 8 15 a m , San Francisco, 12 noon; Fresno, 2 p m , Bakersfield, 3 30 p m., and arrive at Los Angeles at 5 p m

Northbound planes will leave Los Angeles at 12 midnight, Bakersfield at 1 45 a m., Fresno, 3 30 a m., San Francisco, 5 30 a m , Medford, 9 30 a. m., Portland, 12 noon and arrive at Seattle at 2 p m

The new route is the longest of the contract air mail routes and, being 1,099 air miles in length, is the only one to exceed the 1,000 mile limit on 10 cent postage The rate between Seattle will be 15 cents, all other points, 10 cents.

This route is designed only to accommodate the cities to which it provides service and no attempt will be made to make connections with the transcontinental either at San Francisco, Los Angeles or via Pasco, Wash Little advantage could be gained over present train service and a schedule designed to make connections with eastbound air mail would render the north and south service virtually valueless

On the contract the schedule as arranged will afford marked improvement over present railroad mail time An illustration is provided by a mail train leaving Seattle 4-30 o'clock Monday afternoon, which arrives in San Francisco 9 10 Wednesday morning and Los Angeles 7 40 Thursday evening The train out of Seattle will have had 11 hr, 15 min start when the mail plane leaves at 3 45 Tuesday morning The plane, however, will reach San Francisco at 11 45 Tuesday morning and Los Angeles at 5 p m the same day.

Monmouth, Ill.

By Ralph B Eckley

A seemingly steady stream of Wacos continues to come through from the factory of the Advance Aircraft Company at Troy, Ohio, a total of twenty planes having been sold by the Midwest Airways Corporation during the past seven months It is expected that several more ships will be sold this season.

The excellent performance of the K-6 Waco, flown in the Reliability Tour by John H Livingston, caused the almost immediate sale of the plane upon its return from Detroit, after having won fourth place in the contest. About two months ago the Monroe Drug Company of Quincy, Ill., decided to use an airplane to make rush deliveries of their famous product, "Putnam Dyes", and an OX-5 Waco was purchased from the Midwest Airways Corporation Since then the use of the plane has continued to grow, making it necessary to purchase an additional ship and the K-6 Waco was selected for use on the longer and more urgent business trips.

The Midwest Airways Corporation recently observed its fifth anniversary. The company has enjoyed a profitable business during the five year period, and the field has a clean record of never having had a serious accident to plane, pilot or passenger.

Atlanta, Ga.

By Roy E. White

With more than 15,000 people looking on, "Miss Atlanta", the first air mail plane, bringing as its cargo 10 pouches of mail, E K. Large, Atlanta postmaster, and H E Ross, Jacksonville, Fla., postmaster, arrived at Candler Field Wednesday afternoon Sept 15, at 3 25, 15 min before its scheduled time, from Miami, Fla. This opened the Atlanta-Miami air mail route, which establishes Atlanta as the gateway of the South in the air line leading to all cities in the Southeastern states.

Two years ago, Candler Field was a wooded section of rolling hills and dales with only one small place suitable for airplane landing and it was in that small space that Beeler Blevins, well-known Atlanta pilot and teacher, began to fly to and fro This was the real start of Atlanta's present mammoth landing field.

Candler Field is ideal for landing, being entirely surrounded by a once famous two and a quarter mile automobile race track, which makes it a natural marker for the air pilot

It is situated half a mile West of Hapewell, Ga., and seven miles South of Atlanta and is within only two blocks from a street car line with a ten minute schedule from Atlanta Candler Field has two automobile entrances and more than 1,000 automobiles can park within clear view of the field Atlanta's city officials have developed the field into a modern up-to date airport

When the "Miss Atlanta" arrived more than twenty-five planes were lined up on the field to take part in the opening ceremonies. Among these were nine commercial planes, several private ones, and the rest Army planes from Alabama

During recent months Blevins and Davis have piloted Wacos from the field, A B McMullen, Wacos and Swallows and C H Serratt, a Canadian Curtiss. In the matter of school work H. A Britton, J H. Burns and Martmer Hayes have almost completed a course of study under Blevins, and James Wynne and J. A. Harris and studying under A B McMullen

Both Douglas Davis and Beeler Blevins are Waco distributors for Georgia with headquarters in Atlanta

Candler Field Atlanta Ga., at the time of the arrival of the first plane of the Florida Airways service from Jacksonville, Fla.

Miami Gets Gold by Plane

The first relief plane of the Florida Airways Corp, operators of the Atlanta Tampa-Miami air mail route, returned to Tampa late on Sept 20 after delivering a cargo of $50,000 in gold, requested by Miami bankers from Jacksonville banks, and more than 300 lb of important mail matter after the severe tornado

Under the supervision of the Tampa Relief Committee, the Florida Airways has been holding two planes in reserve for special transportation of officials, food cargoes and money dispatches to Miami Smaller planes have been operating to Hollywood, Fort Lauderdale and Clewiston.

The company's second relief plane left at noon Sept 20 for Miami following requests for a cargo of fresh meats

More Ball Catching

Otto Miller, coach of the Dodgers, recently caught three balls tossed from an airplane at Curtiss Field Miller's first catch, from a height of 400 ft, was made on the third try. His second, from 450 ft, was also made on the third throw. The third, from 500 ft, was caught on the third attempt

Cincinnati, O.

By R Alvin Hug

With the coming of Fall, passenger carrying has fallen off somewhat but practically all fliers at the various airports are still active and flying frequently. Business throughout the Summer has been very good and all operators are highly elated over the hundreds, yes thousands, of paid flights they have made.

During the first part of September, Capt. John W. Pattison, vice-president of the Union Central Life Insurance Co., made a trip to Cleveland in his Waco to attend the re-union of the regiment in which he served in Poland during the World War. Pattison was forced down over night at Ashland on account of bad weather, but otherwise the trip was without incident. He was the only veteran to arrive in Cleveland by airplane.

Herbert B. Ehler, campaign counsellor, of New York, and his wife arrived in Cincinnati several weeks ago to confer with business men of this city regarding the converting of Mammoth Cave into a national park. This is believed to be the first business appointment of its kind to be kept by airplane. Mr. Ehler, after his short stay here, continued his trip to Texas in his airplane.

U. S. Air Forces

The Proposed Flight Around South America

The War Department contemplates a flight around South America by five Army Air Corps airplanes The State Department has requested the various countries on the route of the proposed flight for permission to fly over their territory. Favorable replies have been received from some of them. Until replies shall have been received from all of the countries concerned, the War and State Departments deem it courteous not to discuss the route or the detailed plans for the flight.

The purpose of this flight is to strengthen the amicable relations already existing among the American Republics, to demonstrate the feasibility of aerial transportation and communication between these widely separated nations, and finally, to subject amphibian planes to a severe service test over both land and water Loening Amphibian planes with Liberty (inverted) engines will be used

Though definite plans cannot be announced until the State Department has learned the wishes of foreign nations concerned, it is hoped that the flight may start from San Antonio, Tex, sometime in the late Fall Efforts will not be made to attain speed records, stops being so arranged as to permit the personnel of the flight to visit the capitals of the nations along the itinerary and give opportunity for examination of the airplanes by such observers of those nations as may be interested in the development of commercial air transportation

It is estimated that the total cost of this flight will amount to about $54,000, which is deemed a wise investment in view of the thorough test to be obtained both as to these particular airplanes and as to the practicability of air communication between the nations of the western hemisphere [and also because of the tremendous advertising value to the American Aircraft Industry as a whole in demonstrating to our Southern friends the excellence of American aircraft products—Editor]

The ten pilots chosen to participate in the proposed flight are as follows Maj Herbert A Dargue (in charge) Capts Arthur B McDaniel, Ira C Eaker, Chatou F. Woolsey, 1st Lieuts. Bernard S Thompson, Leonard D Weddington Chas MeK Robinson, Muir S Fairchild, Ennis C. Whitehead and John W Benton

Parachute Testing at Scott Field

A test of parachutes was recently made at Scott Field, Belleville, Ill, the chutes, with dummies attached being dropped from a captive balloon at an altitude of 100 meters (328 ft) The average time of opening was 2½ sec, counted from the instant they were ripped until they were fully opened Twenty chutes were tested from one balloon, and the total time for ascent, dropping descent and attaching of the dummy was two hours

Flying in a Curtiss O-1 Falcon observation plane (Liberty) of the Air Corps

The Air Corps Forest Patrol

The U S Army Air Corps forest patrol in California, Oregon, Washington, Idaho, and Montana, under command of Lieut. Lloyd Barnell, Air Corps, is near the close of one of the worst seasons of forest fires in its history.

The patrol has accomplished wonderfully effective work in mapping the progress of fires, and in advising land fighters by radio, of the best methods of attack to take advantage of wind changes and land contours

In northern California the fire record has been the worst in 15 years, and in other northern States the damage by fires altogether is unsurpassed, in the opinion of Lieutenant Barnett.

Sale of Aviation Supplies

Commanding Officers of Army Air Corps stations have been authorized to make emergency sales of aircraft fuel, oil, equipment, and supplies, and in emergencies to furnish me-

obanical service, tempovary shelter and other assistance, for cash payments, in order that civil aircraft forced down may continue to the nearest airport operated by a private enterprise Complete engines, airplane wings and other major items of equipment will not be sold

Supplies sold and assistance furnished will be charged for at the fair market value prevailing locally In cases where similar supplies are not available in nearby localities, supplies may be sold at cost price plus ten per cent Mechanical service furnished will be charged for on the same basis as the local rates for similar work Where there are no local firms and the fair local price cannot be determined, such service will be charged for at the rate of $1 25 per hour for each mechanic Shelter may be furnished when available, at the rate of $1 00 per day for single engine airplane, and $3 00 per day for multi-engine airplanes

State of Delaware Photographed from the Air

The flying and laboratory work of the 20th Photo Section at Langley Field, Va, in making a mosaic of the State of Delaware and giving a liberal overlap into the adjoining states has been completed The pilot on this project was 1st Lieut George C McDonald Air Corps, and the photographers Technical Sergeant Vernon H Merson and Staff Sgt Herman L Chestnutt Each photographer covered about half of the state

Herbert Photos
Army Air Corps' bimps' TC-5 and TC-9 from Langley Field, Va., circling the Washington monument at Washington D C

Planes Remodeled for Gunnery Projects

Four special DH4M 2 airplanes are being remodeled at the Repair Depot, Fairfield Intermediate Depot, for use in aerial gunnery projects Complete sets of the latest types of radio receiving and sending equipment are being installed, together with approved devices for towing targets through the air Inasmuch as these gunnery tests will probably be made at night, the airplanes are being equipped with the latest type of night-flying apparatus Instead of the old wind-driven generator, an electric motor-driven generator is now used. The radio set is known as the SCR-134 Either telegraphic signals or the voice may be used for both sending and receiving

Five thousand feet of steel cable are carried on the tow target reel The wind pressure, acting on the target, carries it any desired distance up to the limit imposed by the length of the cable The letting-out of the target is controlled by a brake drum When the target cable is wound up, a foot-operated clutch is used, the power being obtained from a small wind-driven propeller These four specially-equipped airplanes, when completed, will be flown to Philips Field, Aberdeen, Md where the gunnery work will be undertaken in connection with other ordnance projects at the Aberdeen Proving Grounds.

More Cloud Dispelling Experiments

Lieut Dilong Mills, U S N, of VT Squadron One, who has been conducting fog dispelling tests in conjunction with the Army at Hartford, Conn, made two tests recently

The first test was made when a cloud at 3,600 ft altitude, cubical in shape, about 800 ft. on a side, was attacked One trip was made over the top center of the cloud and the sand cut the cloud in half A second trip over the cloud caused it to vanish completely

On another flight a large cloud directly over the city was attacked at about 1,300 ft The plane entered the cloud at about 1,200 ft altitude As the cloud was larger and thicker than the pilot anticipated, he decided to turn about and get out to avoid any embarrassing complications. To his surprise, on turning around it was discovered that the plane had cut a wind path in the cloud which enabled him to return to open air without any mishap

Alaskan Survey Returns for Season

The Naval Alaskan Aerial Survey Expedition was to leave Juneau for Seattle, Wash on Sept 10, having finished the mapping of Admiralty and Douglas Islands

Over 15,000 square miles have been mapped thus far and considerable more territory is yet to be covered

Army Air Orders

Capt John G Whitesides Air Corps, Langley Field, to New York City, sailing Oct. for Philippine Islands via Government transportation

Sec. Lieut Henry R Baxter, Air Corps, Mitchel Field, to Brooks Field

Maj Walter H Frank, Air Corps, detailed as assistant commandant of the Air Corps Tact School, Langley Field

First Lieut. Arthur William Williams, Air Corps, Res, West Palm Beach, to active duty Mitchel Field, reverting to inactive status Oct. 15

Capt Leo James Griffin, Air Corps Res, Atlantic, Mass, to active duty Langley Field reverting to inactive status Oct. 6

Capt William F Donnelly, Air Corps Kokomo, Ind, to Chanute Field The name of Captain Donnelly is removed from the detached officers' list upon his relief from Kokomo

Sec Lieut Turner A Sims, and Robert E M Des Islets, Air Corps, Brooks Field, to Fort Sam Houston

Maj Harold A Stranss, Air Corps, relieved from assignment and duty as assistant commandant Bal & Air Sch, Scott Field, and will report to com off at that place for duty

First Lieut Walter K Burgess Air Corps, Kelly Field, to Clover Field.

Navy Air Orders

Ens Elliott M Moore det. Nav Air Sta., Pensacola, to U S S Arkansas.

Lieut Ralph E Davison det U S S Langley to command VS Squad 2, Aircraft Squads, Bat Flt

Ch. Mach William W Wilkins det. Nav Air Sta, Pensacola, to c f o., U S S Saratoga

Where to Fly

WHERE TO FLY
CONTINUED ON FOLLOWING PAGE

Where to Fly

CONTINUED

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INDEX TO ADVERTISERS

PUBLISHER'S NEWS LETTER

If the races for the Schneider Cup take place as scheduled, and the cup is permanantly won by Italy or the United States, there is going to be a great opportunity for some donor to present a trophy which will carry on in the future, this most interesting contest. And it is not too early to consider some of the qualifications that ought to be required of the person who puts up this important prize. Too often, in the past, a cup or trophy has been given without any continuing interest or prize money attached to it and the organization that has been made the custodian has had to secure, each year, funds for prize money to supplement the trophy itself. The donors of the prize money get little praise or publicity for their generosity, while the giver of the original trophy gets all the credit. To obviate this condition in the future, the very excellent suggestion has been made that an endowment commensurate with the importance of the contest be given with every trophy. This would relieve the future holders of the contest from having to secure cash to be offered as an inducement for entries in the race. In the case of the Schneider Trophy, the succeeding donor should make provision for prize money to the amount of at least $5,000 for every race that is run. In this way the trophy would be one that would not only bring fame to its holder and donor but would make the present system of having to raise supplementary funds every year unnecessary. Instead of waiting until it is too late, the N.A.A. should announce the conditions under which it will accept a trophy for this premier race, in case any American should feel disposed to make such a presentation.

* * * *

It was hoped that a concensus of opinions regarding the pending aircraft regulations could be secured from prominent aircraft people and that they could be published in AVIATION. One of the most significant facts that has been noted over a long period of years is that when matters of the greatest importance to the future of aircraft development are under consideration those who should be the most outspoken get behind the excuse of being too occupied to give the subject adequate study. "Too busy" is the standard excuse and it will therefore be very difficult, if not impossible, to give what ought to be a broad and many sided discussion of this most serious problem. AVIATION has had the courage of its opinions relating to the subject of aircraft regulation and the modifications in the present law are in no small measure due to the publicity it gave to the opinions of operators, last year. Now that the law is about to be put into effect, those affected the most by the rules should express their views or accept with good grace any rules and regulations that are put into effect.

* * * *

When Gene Tunney was flown to the Philadelphia fight by Casey Jones, some of the most conservative newspapers printed front page stories of Tunney "risking death" by making the flight. They also seemed to give the impression that this method of travel was a most dangerous kind. At about the same time there were published the figures showing the thousands of miles flown by the Army Air Corps over their airways without accident and news of many thousand miles of air travel flown over the air lines of Europe without any danger whatever. It does seem that whenever such statements are made by responsible papers that aviation people should write to the editors giving them facts and figures that will make statements of this kind less frequent in the future.

* * * *

The unfortunate aftermath of the Sikorsky New York-Paris flight is one of the eventualities that should be considered when an undertaking of this kind is planned. No successful operation is well planned if it does not take into account the effects of failure. This flight was intended to give a demonstration of a long distance air voyage and stimulate the imagination of the public. Engineers are notoriously poor publicity getters or directors, and Mr. Sikorsky can be commiserated with on this assumption, but in making plans for any such events in the future it will be well for those who finance the ventures, those who direct them, as well as the engineering talent, to insist that the effect of failure on the public must be considered. As AVIATION has pointed out frequently, there seems to be a fly paper attraction to aeronautics for the publicity seeker. No scheme is too wild to have some person sponsor it for a little fleeting newspaper notoriety. If the effect of possible failure on the public had been kept constantly in mind and all plans made with this contingency considered, some of the most serious setbacks commercial aviation has had might have been made less damaging, if not avoided completely. To take off on a record breaking flight, without preliminary tests of the landing gear, seems to be a most unnecessary taking of chances with public opinion. And it is also to be hoped that, if another attempt is to be made, it will, if backed by American money, give a little more emphasis to American products, pilots and procedure. A little hard thinking along these lines would save the best interests of aircraft much unnecessary discrediting.—L.D.G.

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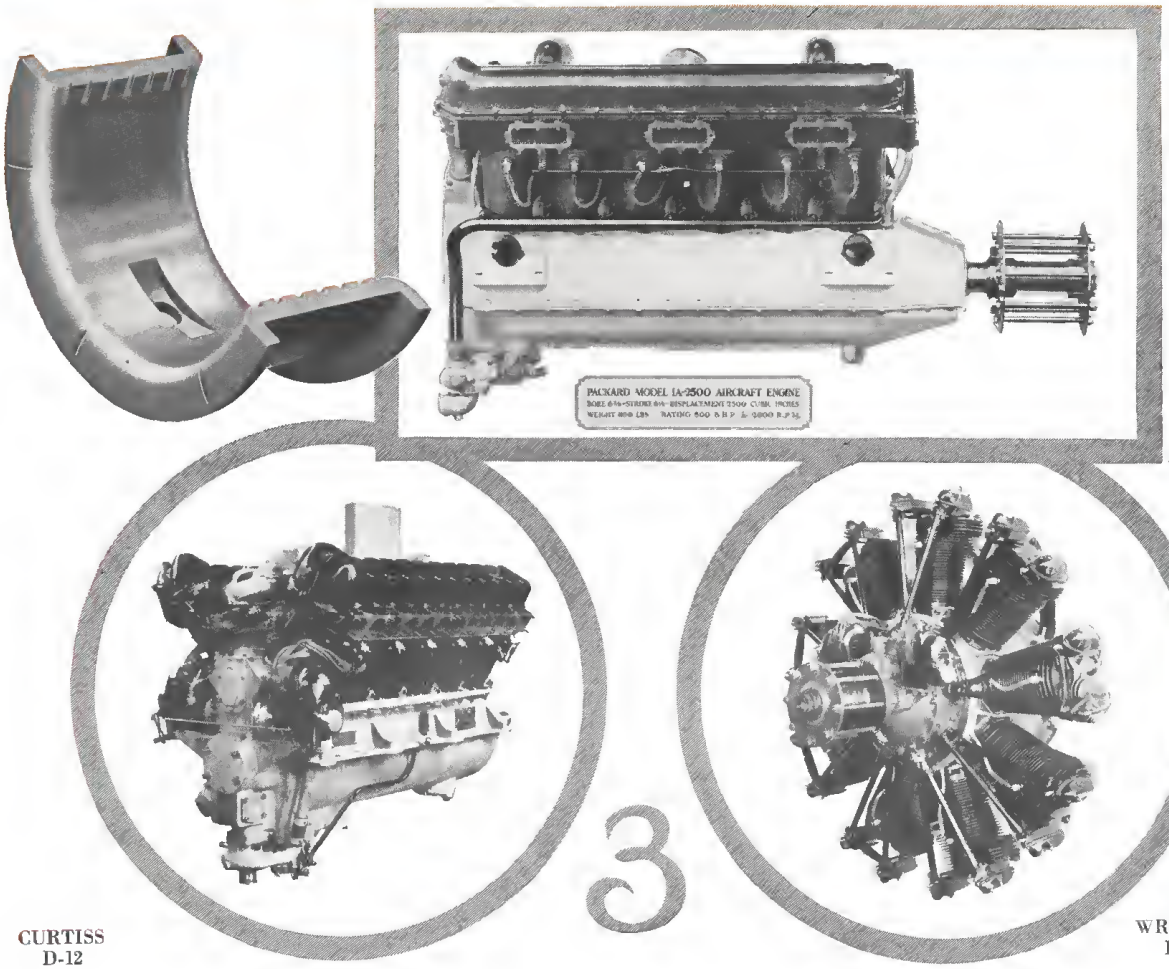

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